

IN THE CLAIMS:

Please substitute the following claims for the same-numbered claims in the application:

1. (Currently Amended) An autonomously self-monitoring and self-correcting integrated circuit device comprising:

a self-testing controller adapted to periodically and autonomously perform on-chip performance self-testing of said integrated circuit device, wherein said performance self-testing comprises autonomous application of functional test sequences to said integrated circuit device until failure;

a comparator adapted to evaluate whether results from said self-testing are within acceptable limits; and

a processor adapted to autonomous adjust parameters of said integrated circuit device until said results from said self-testing are within said acceptable limits.

2. (Currently Amended) The integrated circuit in claim 1, all the limitations of which are incorporated herein by reference, wherein said performance self-testing comprises one or more of a built-in self test (BIST) unit and a functional testing unit.

3. (Currently Amended) The integrated circuit in claim 2, all the limitations of which are incorporated herein by reference, wherein said functional testing unit is

adapted to apply said functional test sequences to said integrated circuit device until failure, and said comparator compares the failure frequency against predetermined limits.

4. (Currently Amended) The integrated circuit in claim 1, all the limitations of which are incorporated herein by reference, wherein said processor adjusts said parameters by altering the voltage supplied to portions of said integrated circuit device.

5. (Currently Amended) The integrated circuit in claim 1, all the limitations of which are incorporated herein by reference, further comprising electronic fuses, wherein said processor is adapted to activate said electronic fuses to permanently change said parameters of said integrated circuit device.

6. (Currently Amended) The integrated circuit in claim 1, all the limitations of which are incorporated herein by reference, wherein said processor adjusts said parameters by permanently altering the voltage produced by voltage regulators.

7. (Currently Amended) The integrated circuit in claim 1, all the limitations of which are incorporated herein by reference, further comprising a permanent storage device adapted to maintain a history of adjustments made to said parameters by said processor.

8. (Previously Presented) An autonomously self-monitoring and self-correcting integrated circuit device comprising:

a self-testing controller adapted to periodically perform on-chip performance self-testing of said integrated circuit device throughout the useful life of said integrated circuit device, wherein said performance self-testing comprises application of functional test sequences to said integrated circuit device until failure;

a comparator adapted to evaluate whether results from said self-testing are within acceptable limits; and

a processor adapted to permanently self-adjust parameters of said integrated circuit device by altering the voltage supplied to portions of said integrated circuit device until said results from said self-testing are within said acceptable limits.

9. (Currently Amended) The integrated circuit in claim 8, all the limitations of which are incorporated herein by reference, wherein said performance self-testing comprises one or more of a built-in self test (BIST) unit and a functional testing unit.

10. (Currently Amended) The integrated circuit in claim 9, all the limitations of which are incorporated herein by reference, wherein said functional testing unit is adapted to apply said functional test sequences to said integrated circuit device until failure, and said comparator compares the failure frequency against predetermined limits.

11. (Cancelled).

12. (Currently Amended) The integrated circuit in claim 8, all the limitations of which are incorporated herein by reference, further comprising electronic fuses, wherein said processor is adapted to activate said electronic fuses to permanently change said parameters of said integrated circuit device.

13. (Currently Amended) The integrated circuit in claim 8, all the limitations of which are incorporated herein by reference, wherein said processor adjusts said parameters by permanently altering the voltage produced by voltage regulators.

14. (Currently Amended) The integrated circuit in claim 8, all the limitations of which are incorporated herein by reference, further comprising a permanent storage device adapted to maintain a history of adjustments made to said parameters by said processor.

15. (Previously Presented) A method of continuously and autonomously self-monitoring and self-adjusting the operation of an integrated circuit device, said method comprising:

periodically performing, by said integrated circuit device, on-chip performance self-testing of said integrated circuit device, wherein said integrated circuit device comprises a product to be tested and wherein said performing of said performance self-

testing comprises applying functional test sequences to said integrated circuit device until failure;

self-evaluating, by said integrated circuit device, whether results from said self-testing are within acceptable limits; and

self-adjusting, by said integrated circuit device, parameters of said integrated circuit device until said results from said self-testing are within said acceptable limits.

16. (Currently Amended) The method in claim 15, all the limitations of which are incorporated herein by reference, wherein said performance testing comprises one of built-in self testing (BIST) and functional tests.

17. (Currently Amended) The method in claim 16, all the limitations of which are incorporated herein by reference, wherein said functional tests comprise looping through functional test sequences until failure, and said evaluating of said results compares the failure frequency against predetermined limits.

18. (Currently Amended) The method in claim 15, all the limitations of which are incorporated herein by reference, wherein said process of adjusting said parameters comprises altering the voltage supplied to portions of said integrated circuit device.

19. (Currently Amended) The method in claim 15, all the limitations of which are incorporated herein by reference, wherein said process of adjusting said parameters

comprises activating electronic fuses to permanently change said parameters of said integrated circuit device.

20. (Currently Amended) The method in claim 15, all the limitations of which are incorporated herein by reference, wherein said process of adjusting said parameters comprises permanently altering the voltage produced by voltage regulators.

21. (Currently Amended) The method in claim 15, further comprising maintaining a history of adjustments made to said parameters during said adjusting process.

22. (Previously Presented) A method of continuously and autonomously self-monitoring and self-adjusting the operation of an integrated circuit device throughout the useful life of said integrated circuit device, said method comprising:

periodically performing, by said integrated circuit device, on-chip performance self-testing of said integrated circuit device throughout said useful life of said integrated circuit device, wherein said integrated circuit device comprises a product to be tested and wherein said performing of said performance self-testing comprises apply functional test sequences to said integrated circuit device until failure;

self-evaluating, by said integrated circuit device, whether results from said self-testing are within acceptable limits; and

permanently self-adjusting, by said integrated circuit device, parameters of said integrated circuit device by altering the voltage supplied to portions of said integrated circuit device until said results from said self-testing are within said acceptable limits.

23. (Currently Amended) The method in claim 22, all the limitations of which are incorporated herein by reference, wherein said performance self-testing comprises one of built-in self testing (BIST) and functional tests.

24. (Currently Amended) The method in claim 23, all the limitations of which are incorporated herein by reference, wherein said functional tests comprise looping through functional test sequences until failure, and said evaluating of said results compares the failure frequency against predetermined limits.

25. (Currently Amended) The method in claim 22, all the limitations of which are incorporated herein by reference, wherein said process of self-adjusting said parameters comprises altering the voltage supplied to portions of said integrated circuit device.

26. (Currently Amended) The method in claim 22, all the limitations of which are incorporated herein by reference, wherein said process of self-adjusting said parameters comprises activating electronic fuses to permanently change said parameters of said integrated circuit device.

27. (Currently Amended) The method in claim 22, all the limitations of which are incorporated herein by reference, wherein said process of self-adjusting said parameters comprises permanently altering the voltage produced by voltage regulators.

28. (Currently Amended) The method in claim 22, all the limitations of which are incorporated herein by reference, further comprising maintaining a history of adjustments made to said parameters during said self-adjusting process.